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**REMOVAL #3 WORK PLAN PARTS II AND III
U.S. DOE FERNALD
OH6 890 008 976**

01/17/91

**USEPA/DOE-FMPC
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS

1251

JAN 17 1991

REPLY TO ATTENTION OF:

Mr. Andrew P. Avel
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

5HR-12

RE: Removal #3 Work Plan
Parts II and III
U.S. DOE - Fernald
OH6 890 008 976

Dear Mr. Avel:

On December 17, 1990, the United States Department of Energy (U.S. DOE) submitted a work plan for Removal Action #3 - Parts II and III, which is the South Groundwater Contaminant Plume - Part II Pumping and Discharge System and Part III Water Treatment System. This work plan was prepared by Westinghouse Materials Company of Ohio. U.S. EPA has reviewed this work plan and has identified the following deficiencies:

GENERAL COMMENTS

1. The work plan lacks the detail needed to describe all activities within the scope of the removal action.
2. The work plan should provide for design of the response action and include plans and schedules for all design and pre-design tasks required to implement the removal action alternative under the Consent Agreement. The work plan should define the following items:
 - The Design team
 - Requirements for additional field data collection
 - Requirements for treatability studies
 - Schedule for completion of design
 - Design criteria and assumptions
 - Tentative treatment schemes

The work plan does not adequately discuss each of these elements.

SPECIFIC COMMENTS

3. Section 2.2, Page 3, Paragraph 4: Explain where the alternative water supply was connected.

4. Section 2.2, Page 4, Paragraph 1: Explain how the outfall pipe repair schedule will be integrated under this work plan.
5. Section 2.4, Page 4, Paragraph (11): Clarify whether this is the same alternative water supply as is discussed in Section 2.2, page 3, Paragraph 4.
6. Section 2.2, Page 5, Paragraph 2: (1) This paragraph states that this work plan includes activities for Parts 2, 3, and 4. The front page of this work plan indicates only Parts 2 and 3. Explain this discrepancy. (2) Because the contaminated ground water will be pumped into manhole 177 (downstream of the NPDES monitoring station, manhole 175), explain whether additional sampling will be done at manhole 177 to verify compliance with National Pollutant Discharge Elimination System (NPDES) requirements. (3) Explain what measures are proposed to verify the removal efficiency of the Interim Waste Water Treatment (IAWWT) system.
7. Section 2.2, Page 5, Paragraph 3: (1) Explain what criteria were used to size the IAWWT if it is not known which of the existing FMPC waste streams will be treated. (2) Verify whether the storm sewer lift station (SSLS) discharge rate is the same as the capacity at the IAWWT. (3) Explain what measures will be taken to prevent the 150-gpm IAWWT from flooding during heavy rain if the SSLS is to be disconnected. (4) Explain how the solids will be removed from SWRB if the backwash from the IAWWT will be discharged back to the SWRB inlet.
8. Section 2.2, Page 5, Paragraph 4: Explain the need for a booster pump station. The ground-water well pumps can be sized to eliminate the need for a booster station.
9. Section 2.2, Page 5, Paragraph 5: Explain how reduction of uranium discharge can be verified if the monitoring station (NPDES) is to remain at manhole 175. In addition, some sampling of the influent to- and effluent from the IWWT system must be done to verify removal efficiency. Lastly, describe what will be done with the uranium removed from the waste streams?
10. Section 2.5, Page 6, Paragraph 2: Specify the capacity of the Advanced Wastewater Treatment (AWWT) facility. Verify whether the existing discharge sewer is adequate to receive this flow as well as all the flow from the ground-water extraction wells.
11. Section 2.5, Page 6, Paragraph 3: Explain the function of all proposed components, including the AWWT and booster pump station. Specify the capacities of the AWWT, extraction

wells, and future recovery wells. Specify how all these components are to be integrated. Verify whether existing facilities to be used, such as pipelines and tanks, are of adequate size to handle future flows and loads.

12. Section 2.5, Page 6, Paragraph 4: Scheduling conflicts may exist if flows are not known. If future flows will exceed the capacity of existing pipelines, shutdowns will be required. All design parameters should be specified.
13. Section 3.1, Page 7, Paragraph (a): Explain how the recovery well pumping rate will be controlled. Furthermore, the option of handling the spent ion exchange resin should be specified, as it may require some design changes.
14. Section 3.1, Page 7, Paragraph (b): Explain what criteria were used to determine whether existing outfall 7 is of adequate size if the exact number of recovery wells required has not been determined.
15. Section 3.1, Page 7, Paragraph (c): U.S. EPA guidance on remedial design and remedial action (OSWER Directive 9355.0-4A) requires the following submittals:
 - Preliminary design submittal (30 percent) which should include design criteria, the project delivery strategy, results of treatability studies and additional field sampling, preliminary plans and drawings, an outline of required specifications, and a preliminary construction schedule.
 - Intermediate design submittal (65 percent).
 - Pre-final/final design submittal (95/100 percent), which should include the final plans and specifications, operation and maintenance plan, field sampling plan, construction quality assurance plan, contingency plan, and construction cost estimate and schedule.

Although this is a removal action and not a remedial action, the work plan needs to describe in detail (1) the number of "definitive design documents" that will be prepared, (2) what will be included in each of these documents, and (3) how complete (percentage) the design will be for each submittal. Also clarify if Parts 2 and 3 will be addressed together or separately in these documents.

16. Section 3.1, Page 8, Paragraph (f): The schedule for Parts 2 and 3 does not include the required submittals to EPA (see comment to Section 3.1, Page 8, Paragraph [e]). The

schedule seems excessive given the simplicity of this project.

17. Section 3.2, Page 8, Paragraph 1: This paragraph states that the location of the recovery wells has been selected; however, Section 3.1, Page 7, Paragraph (b) states that the exact number and location of the recovery wells will be established. Clarify this discrepancy.
18. Section 3.2, Page 8, Paragraph 2: Explain how the recovery well pumping rate will be controlled for each recovery well. Will this rate be varied during the removal action, or will it be constant?
19. Section 3.4, Page 9: Specify whether permanent easements will be required.
20. Section 4.0, Page 9, Paragraph 1: Verify whether the existing outfall is adequate to handle the proposed and any future ground-water flows. Given that manhole 177 is downstream from the NPDES monitoring station, explain what measures will be taken to comply with NPDES permit requirements.
21. Section 4.0, Page 9, Paragraph (a): Explain what type of throttling will be used to control the pumping rate. Explain what criteria will be used to ensure that the top of the screen will be set below the ground-water surface.
22. Section 4.0, Page 9, Paragraph (b): Explain how this system will work. If all wells are to discharge into a common force main and each well is to be throttled to control the discharge rate from that well, this system will be very difficult to balance: any change made to one well's discharge will affect all other wells.
23. Section 4.0, Page 10, Paragraph (c): Explain the need for this booster station. Describe what type of booster station will be designed and what type of controls will be used to accommodate the variable flow from ground-water extraction wells.
24. Section 4.0, Page 10, Paragraph (d): Specify the "sufficient quantity" of uranium that the IAWWT will remove.
25. Section 4.0, Page 10, Paragraph following (d): If the IAWWT will be operational before Part 2 operation (pumping and discharge system), explain how the performance acceptance testing of the entire system will be done before operation. Explain, in detail, what is included in this testing.

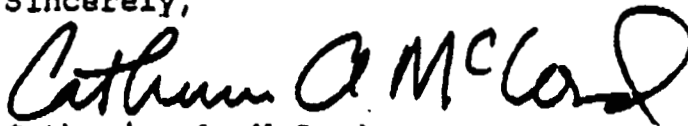
26. Section 4.0, Page 10, Operation and Maintenance: The Operation and Maintenance Plan has to be submitted to U.S. EPA for approval with the pre-final/final design submittal.
27. Section 5.2, Page 11: NPDES monitoring should be conducted downstream from the last tie-in to the effluent pipeline. Total combined flow must be monitored.
28. Attachment I: Parts 2 and 3 schedules do not indicate the required 30-percent, 65-percent, and 95/100-percent submittals. The design period of 198 days for Part 2 seems excessive. The easement procurement should start as soon as possible because it may delay construction. Both schedules show simultaneous completion of Parts 2 and 3, which is inconsistent with the discussion in Section 4, page 10. Explain this discrepancy.
29. Attachment II -- Section 1.0, Page 1: The proposed 35 Pci/g activity level needs to be substantiated with measured isotopic ratios of uranium.
30. Attachment II -- Section 1.0, Page 1: This section should state the objective of the sampling to be conducted and then present data quality objectives. In addition, build-over criteria should be specified for all contaminants.
31. Attachment II -- Section 1.0, Page 1, Paragraph 3: The sampling plan should specify the size of the grid and the method used to collect "statistically representative" soil samples.
32. Attachment II -- Section 1.0, Page 1, Paragraph 3: The work plan should state why only the upper 6 inches of soil will be sampled and whether any provision has been made for additional sampling if the build-over criteria are exceeded.
33. Attachment II -- Section 1.0, Page 1, Paragraph 4: Field screening techniques should also be used in selecting samples for "Full HSL" analysis.
34. Attachment II -- Section 1.0, Page 2, Paragraph 1: The text refers to soil samples that will be collected and analyzed for hazardous substance list parameters; however, the table provides information for water samples. This discrepancy should be explained or corrected.
35. Attachment II -- Section 1.0, Page 2, Paragraph 2: The work plan should specify the number of environmental monitoring verification samples and how these samples will be selected. The verification samples should be split samples and should be analyzed in both on- and off-site laboratories.

36. Attachment II -- Section 2.0, Page 3, Paragraph 3: TCLP analysis should be conducted using the method specified in the final regulation (55 Fed. Reg. 26986).
37. Attachment II -- Section 3.0, Page 3, Paragraph 4: Define EM-2-013.
38. Attachment IV -- Page 2, Paragraph 1: Note that discharge to navigable waterways is not the only discharge that requires an NPDES permit.

Based on the above deficiencies, U.S. EPA is disapproving this removal action work plan. Within thirty (30) days of the date of this letter, U.S. DOE must submit a revised work plan that corrects all the deficiencies.

Please contact me at (312/FTS) 886-4436, if you have any questions.

Sincerely,



Catherine A. McCord
Remedial Project Manager

cc: Acting Director, OEPA
Graham Mitchell, OEPA-SWDO
Leo Duffy, U.S. DOE
Joe LaGrone, U.S. DOE